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2003 MICHIGAN FALL TURKEY HUNTER SURVEY

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ABSTRACT

A survey of turkey hunters was conducted following the 2003 fall hunting season to determine turkey harvest and hunter participation. During the 2003 fall hunt, an estimated 15,000 hunters harvested about 5,000 turkeys. Harvest declined 8% between 2002 and 2003 largely because fewer harvest tags were sold and less area was open for hunting. About 33% of hunters successfully harvested a turkey in 2003, compared to 31% in 2002. About 64% of the hunters rated their hunting experience as excellent, very good, or good.

INTRODUCTION

Fall wild turkey (*Meleagris gallopavo*) hunting seasons were implemented in Michigan to maintain turkey populations at levels matching biological and social carrying capacities. In 2003, 14 management units totaling 26,424 square miles were open for fall turkey hunting during October 7-November 9 (Figure 1). In 2003, hunting during the fall season was discontinued in Antrim, Benzie, Charlevoix, Cheboygan, Emmet, Grand Traverse, Iosco, Kalkaska, Lake, Leelanau, Manistee, Mason, Mecosta, Missaukee, Newaygo, Oceana, Ogemaw, Osceola, Otsego, and Wexford counties. However, hunting was permitted in five additional counties (Huron, Livingston, Macomb, Sanilac, Tuscola), and the hunting area in Dickinson County was expanded.

People interested in obtaining a hunting license for the fall season could enter into a random license drawing conducted by the Department of Natural Resources. Applicants could choose one hunt area. Any licenses available after the drawing was completed were made available on a first-come, first-served basis to applicants that were unsuccessful in the drawing. Then beginning one week after licenses were available to unsuccessful applicants, all remaining licenses were made available to nonapplicants. Leftover licenses were available for eight management units (G, GA,



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GB, L, M, N, O, and W; Table 1). Licenses for units E, G, GA, GB, GC, L, Q, QA, T, and WA were valid on private lands only, while licenses for units M, N, O, and W were valid on all land ownership types (i.e., public and private land). Hunters were allowed to take one turkey of either sex (i.e., one harvest tag) with their license.

The Wildlife Division has the authority and responsibility to protect and manage the wildlife resources of the State of Michigan. Harvest surveys are one of the primary management tools used by the Wildlife Division to accomplish its statutory responsibility. Estimating harvest, hunting effort, and hunter satisfaction are among the primary objectives of these surveys.

METHODS

Following the 2003 fall turkey hunting season, a questionnaire was sent to 4,260 randomly selected people who had purchased a turkey hunting license. Hunters receiving the questionnaire were asked to report whether they hunted, number of days spent afield, and whether they harvested a turkey. Successful hunters also were asked to report where their turkeys were taken (public or private land) and beard length of the harvested bird. Birds with a beard <4 inches long were classified as juveniles (<1 year old), while birds with longer beards were adults (≥ 1 year old). Finally, all license buyers were asked to rate their overall hunting experience.

Estimates were based on information collected from random samples of hunting license buyers. Thus, these estimates were subject to sampling errors (Cochran 1977). Estimates were calculated using a stratified random sampling design (Cochran 1977) and were presented along with their 95% confidence limit (CL). In theory, this confidence limit can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies that the true value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably more serious than theoretical calculations of sampling error. They include failure of participants to provide answers (nonresponse bias), question wording, and question order. It is very difficult to measure these biases; thus, estimates were not adjusted for these possible biases.

Questionnaires were mailed initially during mid-November 2003, and up to two follow-up questionnaires were mailed to nonrespondents. Although 4,260 people were sent the questionnaire, 36 surveys were undeliverable resulting in an adjusted sample size of 4,224. Questionnaires were returned by 3,863 people, yielding an 91% adjusted response rate.

RESULTS

In 2003, the Wildlife Division offered 34,950 licenses for sale, and hunters purchased 19,025 licenses for the fall turkey hunting season (Table 1). Licensees included 13,909 people that were successful in the drawing for a license and 484 applicants that were

unsuccessful in the drawing. In addition, 4,632 people that had not entered into the drawing purchased a license.

The number of licenses sold in 2003 decreased 13% from 2002. In 2003, about 15,198 hunters spent 79,163 days afield pursuing turkeys ($\bar{x} = 5.2 \pm 0.2$ days/hunter) and harvested 4,992 birds (Table 2). About 95% of the hunters that went afield were men ($14,440 \pm 339$), and 5% of the hunters were women (758 ± 339). The average age of the license buyers was 46 years (Figure 2). About 6% of the license buyers were younger than 17 years old (1,061).

The number of people pursuing turkeys decreased 15% from last year. This decrease occurred because fewer licenses were available for sale (i.e., license quota decreased 8%). Moreover, the area open to hunting decreased 22%, from 33,698 to 26,424 square miles.

Hunter success was 33% in 2003, compared to 31% success in 2002. However, hunter success is not directly comparable between years because different management units were opened to hunting in 2003. The area of 11 management units was the same or nearly identical in both 2002 and 2003 (E, G, GA, GB, L, M, N, O, Q, W, and WA). Hunter success in these 11 units was $31 \pm 2\%$ in 2002 and $33 \pm 2\%$ in 2003. Thus, hunter success appeared to be similar between 2002 and 2003.

Harvest declined 8% between 2002 and 2003 (Figure 3). Harvest declined primarily because fewer harvest tags were sold. Counties with hunters taking 200 or more turkeys included Montcalm, Delta, Calhoun, Midland, Allegan, Menominee, Barry, and Van Buren (Table 3).

About 96% of turkey hunters hunted solely on private land, 3% hunted on public land only, and 1% hunted on both private and public lands (Table 4). Of the 4,992 turkeys harvested in 2003, 97% of these birds were taken on private land ($4,859 \pm 330$ birds), while about 3% of the harvest (130 ± 35 birds) was taken on public land (Tables 5 and 6). Additionally, a few birds (3 ± 6 birds) were harvested from land of unknown ownership. About 53% of the harvested birds had a beard ($2,657 \pm 262$). Most of these bearded birds (72%) were adults ($1,923 \pm 224$); 27% were juvenile birds (717 ± 151).

Of the 15,198 turkey hunters in 2003, nearly 64% rated their hunting experience as either excellent ($2,266 \pm 253$), very good ($2,880 \pm 273$), or good ($4,634 \pm 341$) (Table 7). About 19% of the hunters rated their experience as fair ($2,876 \pm 283$ hunters), while 15% of the hunters rated their experience as poor ($2,225 \pm 248$ hunters). Additionally, about 2% of the hunters (318 ± 108 hunters) failed to rate their hunting experience.

Changes in hunter satisfaction generally parallel changes in hunter success (Figure 4). Between 2002 and 2003, hunter success increased from 31% to 33%, and satisfaction increased from 58% to 64%.

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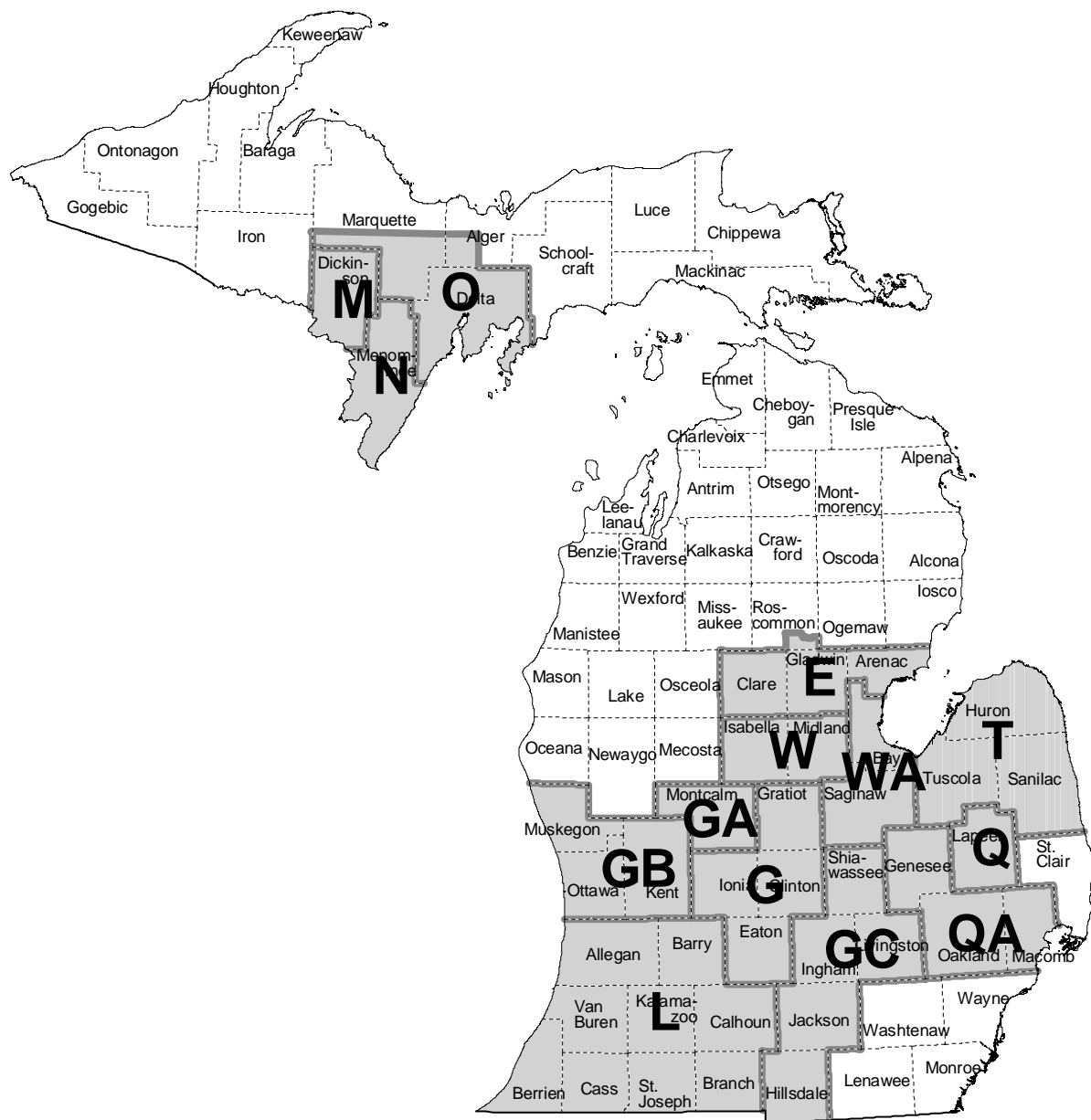


Figure 1. Management units in Michigan open for fall turkey hunting in 2003.

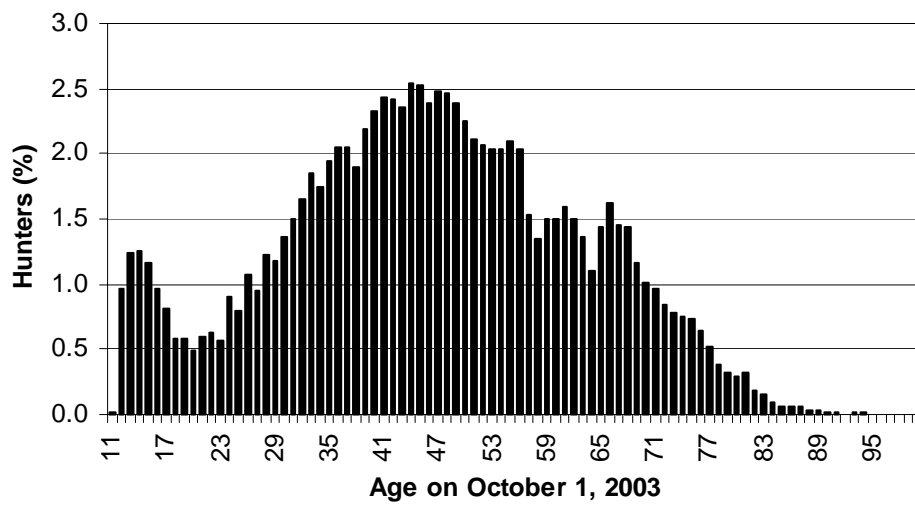


Figure 2. Age of people that purchased a turkey hunting license in Michigan for the 2003 fall hunting season ($\bar{x} = 46$ years). Licenses were purchased by 19,025 people.

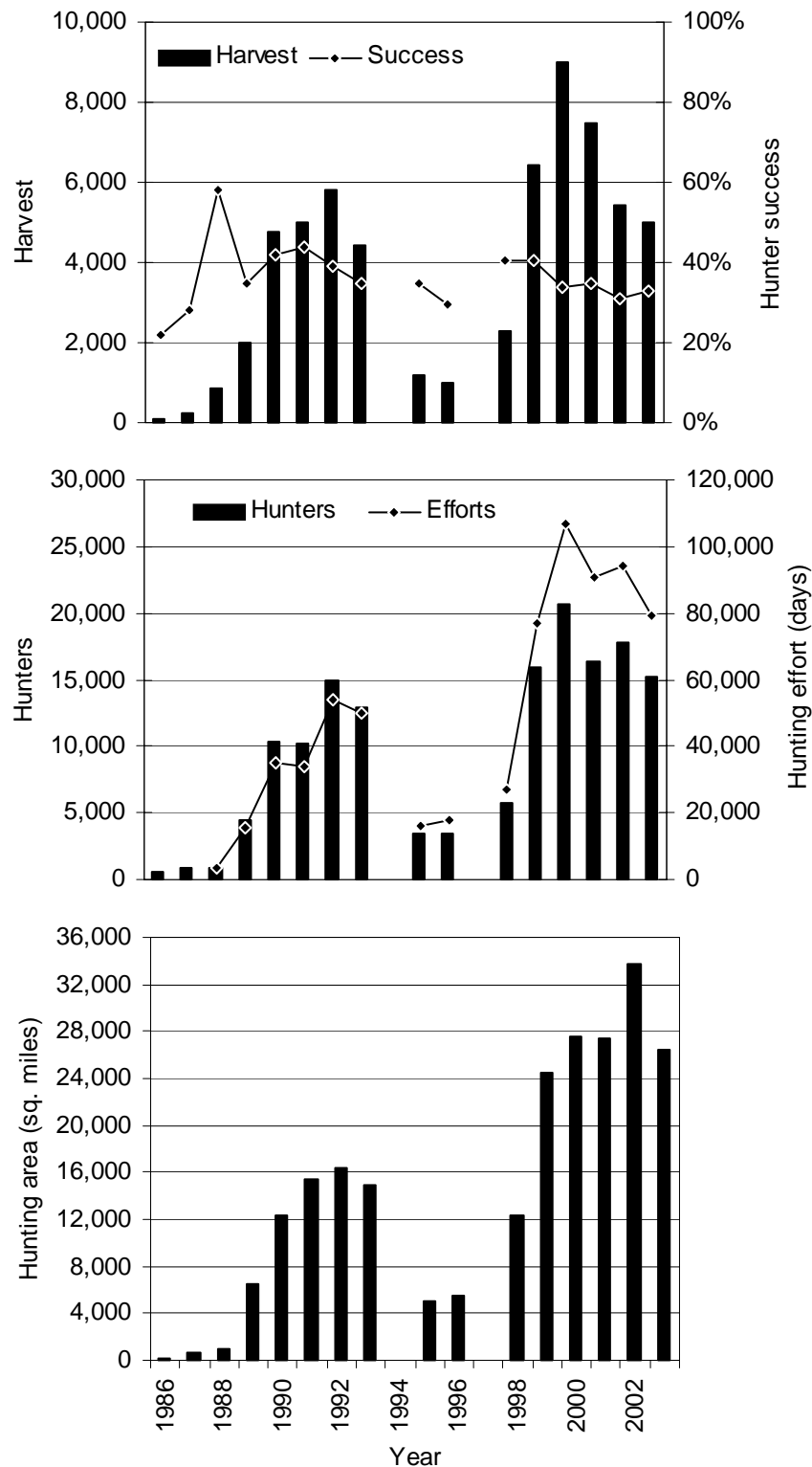


Figure 3. Number of hunters, harvest, hunting efforts, and hunting success during the fall turkey hunting season, 1986-2003. Turkeys were not hunted during the fall in 1994 and 1997.

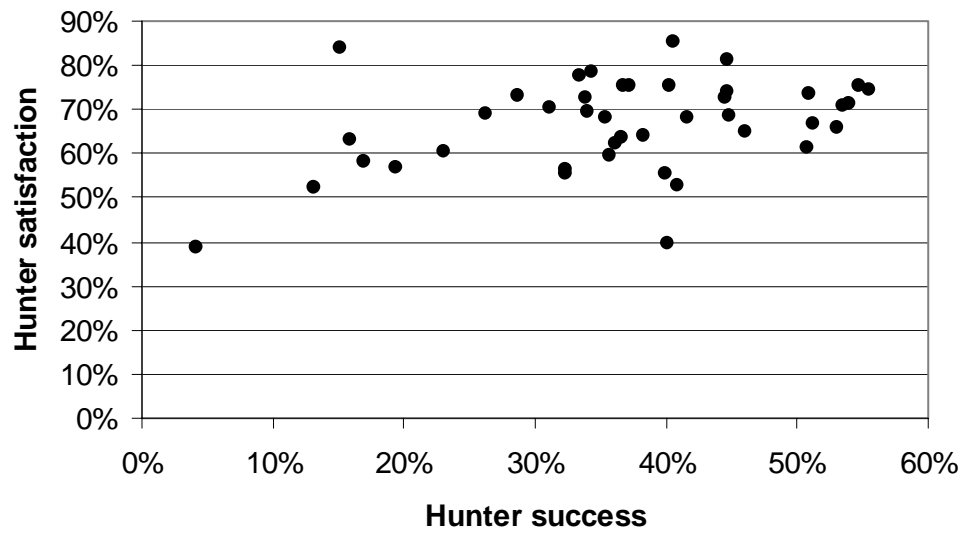


Figure 4. Hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) associated with hunter success for each of 42 counties in Michigan during the 2003 fall turkey hunting season.

Table 1. Number of hunting licenses available and people applying for licenses during the 2003 Michigan fall turkey hunting season.

Management unit	Licenses available (quota)	Number of eligible applicants	Number of applicants successful in drawing ^a	Licenses left over after drawing	Number of licenses purchased by people successful in the drawing	Number of leftover licenses purchased by people in the drawing	Number of leftover licenses purchased by people not in the drawing	Licenses sold
E ^b	2,150	2,620	2,150	0	1,180			1,180
G ^b	2,800	2,534	2,534	266	1,575	103	151	1,829
GA ^b	3,000	1,335	1,335	1,665	798	30	676	1,504
GB ^b	2,500	2,438	2,438	61	1,429	10	42	1,481
GC ^b	1,500	3,348	1,500	0	927			927
L ^b	9,000	6,250	6,250	2,750	4,089	129	2,384	6,602
M	4,400	681	681	3,719	452	9	299	760
N	1,000	565	565	435	387	6	176	569
O	2,300	1,094	1,094	1,206	708	16	369	1,093
Q ^b	400	1,123	400	0	248			248
QA ^b	500	966	500	0	276			276
T ^b	500	2,365	501	0	331			331
W	4,200	1,782	1,663	2,537	1,032	181	535	1,748
WA ^b	700	897	700	0	477			477
Statewide	34,950	27,998	22,311	12,639	13,909	484	4,632	19,025

^aNumber of successful applicants was sometimes larger than the quota because of system processing errors.

^bLicenses were valid on private lands only.

Table 2. Number of hunters, hunting efforts, harvest, and hunting success during the 2003 Michigan fall turkey hunting season.

Manage- ment unit	Hunters ^a		Hunting efforts (days) ^a		Harvest ^a		Hunting success	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
E ^b	994	43	4,428	442	298	51	30	5
G ^b	1,541	67	8,140	914	482	80	31	5
GA ^b	1,226	61	6,395	723	472	73	38	6
GB ^b	1,179	57	5,854	641	424	63	36	5
GC ^b	719	38	3,919	444	195	37	27	5
L ^b	5,210	279	29,793	3,488	1,442	279	28	5
M	527	39	2,645	419	198	36	38	6
N	483	20	2,155	237	246	28	51	5
O	856	48	4,052	569	397	56	46	6
Q ^b	206	10	1,013	113	72	12	35	6
QA ^b	215	11	1,130	130	66	11	31	5
T ^b	286	11	1,504	134	74	13	26	4
W	1,339	73	5,864	620	458	74	34	5
WA ^b	415	15	2,272	227	169	21	41	5
Statewide	15,198	321	79,163	3,920	4,992	330	33	2

^aColumn totals may not equal statewide totals because of rounding errors.

^bLicenses were valid on private lands only.

Table 3. Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2003 Michigan fall turkey hunting season, summarized by county.

County	Hunters ^a		Hunting efforts (days) ^a		Harvest ^a		Hunter success		Hunter satisfaction ^b	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Alger	42	22	237	161	17	14	40	27	40	27
Allegan	554	186	2,144	1,047	247	127	45	17	81	14
Arenac	119	35	612	233	60	25	51	16	61	15
Barry	628	198	3,800	1,718	227	122	36	16	62	16
Bay	34	14	220	96	18	8	51	21	67	18
Berrien	355	154	2,087	1,060	118	91	33	21	78	19
Branch	319	146	1,745	938	62	64	19	18	57	23
Calhoun	754	217	4,416	1,794	258	132	34	14	79	12
Cass	474	176	3,093	1,549	80	74	17	14	59	19
Clare	425	67	1,920	380	137	38	32	8	57	9
Clinton	335	71	1,617	499	150	50	45	12	69	11
Delta	619	58	2,674	446	334	53	54	7	71	6
Dickinson	483	44	2,513	429	197	36	41	7	53	7
Eaton	274	65	1,516	590	63	33	23	11	60	13
Genesee	78	13	348	88	28	8	37	9	76	8
Gladwin	233	47	843	213	83	29	36	11	60	11
Gratiot	272	65	1,406	437	125	46	46	13	65	12
Hillsdale	139	49	579	245	18	12	13	9	52	18
Huron	57	15	283	80	9	5	16	9	63	12
Ingham	101	30	514	198	38	18	37	15	75	13
Ionia	299	67	1,617	445	114	43	38	12	64	12
Isabella	488	77	2,038	441	172	50	35	9	68	9

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as excellent, very good, or good.

Table 3 (continued). Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2003 Michigan fall turkey hunting season, summarized by county.

County	Hunters ^a		Hunting efforts (days) ^a		Harvest ^a		Hunter success		Hunter satisfaction ^b	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Jackson	130	32	566	166	34	17	26	12	69	12
Kalamazoo	417	162	1,801	920	167	104	40	20	76	17
Kent	467	67	2,548	529	158	43	34	8	73	8
Lapeer	197	12	1,013	127	72	12	36	6	64	6
Livingston	93	28	461	170	39	18	42	16	68	15
Macomb	17	9	68	28	7	4	40	24	56	28
Marquette	125	37	675	295	42	22	34	15	69	15
Menominee	464	27	2,042	244	246	28	53	6	66	5
Midland	473	76	2,053	464	253	60	54	9	71	8
Montcalm	1,062	73	5,716	732	472	73	44	6	73	6
Muskegon	274	55	1,233	345	152	43	55	11	75	10
Oakland	49	12	220	67	27	8	55	13	76	14
Ottawa	223	61	1,116	394	90	34	40	13	86	9
Roscommon	24	17	95	73	1	0	4	3	39	34
Saginaw	279	25	1,367	197	142	20	51	6	74	6
St. Joseph	150	98	635	506	23	37	15	23	84	23
Sanilac	102	15	483	93	29	9	29	8	73	8
Shiawassee	127	31	721	239	57	22	45	13	74	12
Tuscola	117	20	599	121	36	10	31	8	71	8
Van Buren	682	206	3,826	1,640	220	122	32	15	56	16
Unknown	2,998	289	15,704	2,343	171	68	6	2	50	5

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as excellent, very good, or good.

Table 4. Number and proportion of hunters hunting on private and public lands during the fall 2003 Michigan turkey hunting season.

Manage- ment unit	Private land only				Public land only				Both private and public lands				Unknown land			
	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL
E ^b	994	43	100	0	0	0	0	0	0	0	0	0	0	0	0	0
G ^b	1,541	67	100	0	0	0	0	0	0	0	0	0	0	0	0	0
GA ^b	1,226	61	100	0	0	0	0	0	0	0	0	0	0	0	0	0
GB ^b	1,179	57	100	0	0	0	0	0	0	0	0	0	0	0	0	0
GC ^b	719	38	100	0	0	0	0	0	0	0	0	0	0	0	0	0
L ^b	5,210	279	100	0	0	0	0	0	0	0	0	0	0	0	0	0
M	293	41	56	7	168	34	32	6	57	22	11	4	10	10	2	2
N	415	25	86	4	43	15	9	3	26	11	5	2	0	0	0	0
O	605	58	71	5	163	41	19	5	80	30	9	4	8	10	1	1
Q ^b	206	10	100	0	0	0	0	0	0	0	0	0	0	0	0	0
QA ^b	215	11	100	0	0	0	0	0	0	0	0	0	0	0	0	0
T ^b	286	11	100	0	0	0	0	0	0	0	0	0	0	0	0	0
W	1,288	75	96	2	35	23	3	2	16	17	1	1	0	0	0	0
WA ^b	415	15	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Statewide ^b	14,592	323	96	0	408	60	3	0	179	42	1	0	19	14	0	0

^a Licenses were valid on private lands only.

^b Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 5. Statewide turkey harvest during the 2003 Michigan fall turkey hunting season, summarized by land ownership type and turkey sex and age.

Land ownership Sex and age of turkey	Harvest	
	Total	95% CL
Private lands		
Males	2,618	262
Juveniles	701	150
Adults	1,901	224
Unknown	16	12
Females	2,231	237
Unknown sex	9	12
Subtotal – Private lands ^a	4,859	330
Public lands		
Males	39	19
Juveniles	16	12
Adults	23	14
Unknown	0	0
Females	91	30
Unknown sex	0	0
Subtotal – Public lands ^a	130	35
Unknown lands	3	6
Grand total ^a	4,992	330

^aColumn totals may not equal subtotals and grand total because of rounding errors.

Table 6. Number of turkeys harvested on private and public lands during the 2003 Michigan fall turkey hunting season.

Manage- ment unit	Private lands		Public lands		Unknown ownership	
	Total	95% CL	Total	95% CL	Total	95% CL
E ^b	298	51	0	0	0	0
G ^b	482	80	0	0	0	0
GA ^b	472	73	0	0	0	0
GB ^b	424	63	0	0	0	0
GC ^b	195	37	0	0	0	0
L ^b	1,442	279	0	0	0	0
M	150	33	45	19	3	6
N	219	27	27	11	0	0
O	351	54	46	24	0	0
Q ^b	72	12	0	0	0	0
QA ^b	66	11	0	0	0	0
T ^b	74	13	0	0	0	0
W	446	74	12	14	0	0
WA ^b	169	21	0	0	0	0
Statewide ^b	4,859	330	130	35	3	6

^a Licenses were valid on private lands only.

^b Column totals may not equal statewide total because of rounding errors.

Table 7. How hunters rated their hunting experience during the 2003 Michigan fall turkey hunting season.

Management unit	Satisfaction level (% of hunters)					
	Excellent	Very good	Good	Fair	Poor	No answer
E ^b	15	20	26	18	20	1
G ^b	19	20	27	20	12	2
GA ^b	19	23	30	15	13	1
GB ^b	22	25	26	12	13	1
GC ^b	20	25	27	14	13	2
L ^b	16	18	32	18	14	3
M	17	21	23	22	15	1
N	20	23	29	13	13	1
O	17	23	29	17	13	1
Q ^b	26	26	24	11	14	0
QA ^b	24	24	26	13	13	1
T ^b	22	27	26	13	11	1
W	16	19	34	17	13	2
WA ^b	21	26	27	14	11	2
Statewide	15	19	30	19	15	2

^aLicenses were valid on private lands only.